
**Information technology — Software
and systems engineering — Tools
and methods for product line
organizational management**

*Technologies de l'information — Ingénierie des systèmes et du logiciel
— Outils et méthodes pour le management organisationnel d'une
gamme de produits*



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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The main purpose of this document is to deal with the capabilities of methods and tools of software and systems product line (SSPL) organizational management. This document defines how the tools and methods can support the software and systems product line-specific organizational management processes. Since product lines deal with multiple products that have similarities, product lines have an unprecedented level of organizational management complexities. This arises from several sources:

- there are inherent differences in organizational considerations because there are parallel development processes (domain and application engineering) in a product line, and the two processes are tightly related with each other around assets;
- the close relationships among domain engineering, application engineering and assets require the highly matured managerial capabilities for addressing the relationships; and
- there is a lack of tools and methods to support the product line-specific organizational management.

Organizational management addresses the orchestration of the product line organization. Introduction and institutionalization of the product line strategy in an organization requires ongoing preparation, planning, execution and improvement efforts. Organizational management provides planning, monitoring and control, and management for product line adoption, transition, operations, evolution and organizational value achievement such as reusability, reducing cost and improving quality.

There are needs for defining product line-specific organizational management processes that integrate the involved product line disciplines with those for a single product. Furthermore, support of tools and methods are required so that a product line organization can perform organizational management under the systematic control of complexities. This document addresses the product line-specific processes in organizational management by dividing those into *organizational-level product line planning*, *organizational product line enabling*, and *organizational product line management* areas with the guidance of a set of tools and methods capabilities for supporting tasks for product line organizational management.

This document is intended to benefit people who acquire, supply, develop, operate and maintain tools and methods for product line organizational management. This document can be used in one or more of the following modes:

- by an organization intended to implement product lines — to understand, adopt and enact the processes, tools and methods for product line organizational management. This also helps the organization to evaluate and select relevant tools and methods based on business and user-related criteria; and
- by a tool vendor who facilitates or leverages product line engineering practices — to provide a set of tool capabilities that should be embodied in a tool for supporting product line organizational management.

The ISO/IEC 26550 family of standards addresses both engineering and management processes and capabilities of methods and tools in terms of the key characteristics of product line development. This document provides processes and capabilities of methods and tools for product line realization. Other ISO/IEC 26550 family of standards are as follows: ISO/IEC 26550, ISO/IEC 26551, ISO/IEC 26555, ISO/IEC 26557, ISO/IEC 26558 and ISO/IEC 26559 are published. ISO/IEC 26552, ISO/IEC 26553, ISO/IEC 26554, ISO/IEC 26560, ISO/IEC 26561, ISO/IEC 26562 and ISO/IEC 26563 are planned International Standards. The following list provides an overview of the family:

- processes and capabilities of methods and tools for domain requirements engineering and application requirements engineering are provided in ISO/IEC 26551;
- processes and capabilities of methods and tools for domain design and application design are provided in ISO/IEC 26552;